

What is claimed is:

- 1 1. A liquid pharmaceutical composition or an extemporaneously prepared liquid
2 pharmaceutical composition, comprising:
3 at least one unpleasant tasting drug;
4 polyethylene glycol of molecular weight at least 900, and
5 polyvinyl pyrrolidone and/or copolyvidone.
- 1 2. The method according to Claim 1, wherein said liquid pharmaceutical composition has
2 a pH from about 2.5 to about 8.
- 1 3. The liquid pharmaceutical composition according to Claim 1, wherein the unpleasant
2 drug is an aromatic compound with a hydrophilic group(s) that can form hydrogen
3 bonds such as hydroxyl, carboxylic or amine groups.
- 1 4. The liquid pharmaceutical composition according to Claim 1 wherein the bitter drug is
2 present at about 0.02 to about 15 percent by weight.
- 1 5. The liquid pharmaceutical composition according to Claim 1, wherein the amount of
2 polyethylene glycol is from about 0.05 to about 10 weight percent.
- 1 6. The liquid pharmaceutical composition according to Claim 5, wherein the amount of
2 polyethylene glycol is from about 0.1 to about 5 weight percent.
- 1 7. The liquid pharmaceutical composition according to Claim 1, wherein said
2 polyethylene glycol is of molecular weight of from about 2000 to about 8000.
- 1 8. The liquid pharmaceutical composition according to Claim 1, wherein the polyvinyl
2 pyrrolidone and/or copolyvidone is present at about 0.1 to about 30 weight percent.
- 1 9. The liquid pharmaceutical composition according to Claim 8, wherein the polyvinyl
2 pyrrolidone and/or copolyvidone is present at about 1 to about 7 weight percent.
- 1 10. The liquid pharmaceutical compositions according to Claim 1, further comprising a
2 sweetening agent and/or a viscosity building agent.

- 1 11. The liquid pharmaceutical composition according to Claim 10, wherein the said
2 sweetening agent is selected from the group consisting of sugar, invert sugar,
3 glucose, fructose, sorbitol, mannitol, xylitol, a high intensity artificial sweetener, a
4 dipeptide sweetener, and combinations thereof.
- 1 12. The liquid pharmaceutical composition according to Claim 10, wherein said
2 sweetening agent is present at about 30 to about 90 weight percent.
- 1 13. The liquid pharmaceutical composition according to Claim 10, wherein the said
2 viscosity-building agent is selected from the group consisting of glycerin, xanthan
3 gum, carrageenan, tragacanth, guar gum, pectin, carboxymethylcellulose,
4 hydroxypropyl methylcellulose, methylcellulose, microcrystalline cellulose and
5 carboxymethylcellulose blends, and mixtures thereof.
- 1 14. The liquid pharmaceutical composition according to Claim 10, wherein said viscosity
2 building agent is present in an amount from about 0.1 to about 3 weight percent.
- 1 15. The liquid pharmaceutical composition according to Claim 1, wherein said
2 composition is used to treat fever, infection, headache, pain, inflammation, excess
3 mucus or phlegm, coughing, allergies, allergic diseases, nausea, vomiting, and
4 motion sickness.
- 1 16. The liquid pharmaceutical composition according to Claim 15, wherein said
2 unpleasant tasting drug is selected from the group consisting of an analgesic, an
3 anti-inflammatory drug, an antihistamine, a decongestant, anti-infective, a
4 mucolytic, an antitussive, an expectorant, and combinations thereof.
- 1 17. The liquid pharmaceutical composition according to Claim 16, wherein said analgesic
2 or said anti-inflammatory drug is selected from the group consisting of
3 acetaminophen, ibuprofen, naproxen, mefenamic acid, ketoprofen, celecoxib,
4 rofecoxib, and tramadol, and combinations thereof.
- 1 18. The liquid pharmaceutical composition according to Claim 16, wherein said
2 antihistamine is selected from the group consisting of loratadine,

3 descarboethoxyloratadine, diphenhydramine, brompheniramine, chlorpheniramine,
4 terfenadine, cetirizine, and combinations thereof.

1 19. The liquid pharmaceutical composition according to Claim 16, wherein said
2 decongestant is selected from phenylpropanolamine, pseudoephedrine,
3 phenylephrine, and combinations thereof.

1 20. The liquid pharmaceutical composition according to Claim 16, wherein said anti-
2 infective is selected from amoxicillin, ampicillin, cloxacillin, flucloxacillin,
3 penicillin, cephalexin, and combinations thereof.

1 21. The liquid pharmaceutical composition according to Claim 16, wherein said
2 mucolytic is selected from the group consisting of ambroxol, carbocysteine, and
3 bromhexine, and combinations thereof.

1 22. The liquid pharmaceutical composition according to Claim 16, wherein said
2 antitussive or said expectorant is selected from the group consisting of caramiphen,
3 dextromethrophan hydrobromide, codeine phosphate, codeine sulfate, guaifenesin,
4 and combinations thereof.

1 23. The liquid pharmaceutical composition according to Claim 22, wherein said
2 guaifenesin is present in an amount of about 1 to about 5 weight percent.

1 24. The liquid pharmaceutical composition according to Claim 23, further comprising at
2 least one additional drug selected from the group consisting of a bronchodilator, a
3 mucolytic, an antitussive, and combinations thereof.

1 25. The liquid pharmaceutical composition according to Claim 24, wherein said
2 bronchodilator is selected from the group consisting of salbutamol, terbutaline,
3 theophylline, and combinations thereof.

1 26. The liquid pharmaceutical composition according to Claim 24, wherein said
2 antitussive is selected from the group consisting of caramiphen, dextromethrophan
3 hydrobromide, codeine phosphate, codeine sulfate, and combinations thereof.

- 1 27. The liquid pharmaceutical composition according to Claim 24, wherein said
2 mucolytic is selected from the group consisting of ambroxol, carbocisteine, and
3 bromhexine, and combinations thereof.
- 1 28. The liquid pharmaceutical composition according to Claim 17, wherein said
2 acetaminophen is present in an amount of about 1 to about 10 weight percent.
- 1 29. The liquid pharmaceutical composition according to Claim 28, further comprising at
2 least one additional drug selected from the group consisting of an analgesic, an
3 anti-inflammatory drug, an antihistamine, a decongestant, an antitussive, an
4 expectorant, a mucolytic, and combinations thereof.
- 1 30. The liquid pharmaceutical composition according to Claim 29 wherein said analgesic
2 or said anti-inflammatory agent is selected from the group consisting ibuprofen,
3 naproxen, mefenamic acid, ketoprofen, celecoxib, rofecoxib, tramadol, and
4 combinations thereof.
- 1 31. The liquid pharmaceutical composition according to Claim 29, wherein said
2 antihistamine is selected from the group consisting of loratadine,
3 descarboethoxyloratadine, diphenhydramine, brompheniramine, chlorpheniramine,
4 terfenadine, cetirizine, and combinations thereof.
- 1 32. The liquid pharmaceutical composition according to Claim 29, wherein the
2 decongestant is selected from the group consisting of phenylpropanolamine,
3 pseudoephedrine, phenylephrine, and combinations thereof.
- 1 33. The liquid pharmaceutical composition according to Claim 29, wherein said
2 antitussive or said expectorant is selected from the group consisting of caramiphen,
3 dextromethrophan hydrobromide, codeine phosphate, codeine sulfate, guaifenesin,
4 and combinations thereof.
- 1 34. The liquid pharmaceutical composition according to Claim 29, wherein said
2 mucolytic is selected from the group consisting of ambroxol, carbocisteine, and
3 bromhexine, and combinations thereof.
- 1 35. A liquid pharmaceutical composition comprising:

5 g acetaminophen, 0.3 g xanthan gum, 55 g sucrose, 10 g 70% sorbitol solution, 20 g invert sugar, 5 g glycerin, 2.5 to 5 g crospovidone, 0 to 2.5 g polyethylene glycol with an average molecular weight between 1000 to 4000, 0.2 g sodium benzoate, 0.05 g sorbitan monolaurate, 0.2 g edetate disodium, 0.2 g sucralose, 0.13 g saccharin sodium, 0 to 0.006 g FD&C or D&C color, 0.2 to 0.4 g flavor, water to a volume of 100 mL, citric acid-sodium citrate dihydrate to a pH of 5 to 6.

36. A liquid pharmaceutical composition comprising:

10 g acetaminophen, 0.3 g xanthan gum, 54 g sucrose, 10 g 70% sorbitol solution, 20 g invert sugar, 5 g glycerin, 5 to 10 g crospovidone, 0 to about 1 g polyethylene glycol with an average molecular weight between 1000 to 4000, 0.2 g sodium benzoate, 0.05 g sorbitan monolaurate, 0.2 g edetate disodium, 0.4 g sucralose, 0.26 g saccharin sodium, 0 to 0.006 g FD&C or D&C color, 0.2 to 0.4 g flavor, water to a volume of 100 mL, citric acid-sodium citrate dihydrate to a pH of 5 to 6.

37. A liquid pharmaceutical composition comprising :

2 to 4 g guaifenesin, 51 g sucrose, 30 g 70% sorbitol solution, 7.5 g glycerin, 2.5 g to 5 g povidone, 0 to 1.5 g polyethylene glycol with an average molecular weight between 1000 to 4000, 0.2 g sodium benzoate, 0.1 g sucralose, from about 0.2 to about 0.4 g flavor, water to a volume of 100 mL, citric acid to a pH of 3 to 4.

38. A liquid pharmaceutical composition comprising :

0.3 g dextromethorphan hydrobromide, 60 g sucrose, 20 g invert sugar, 2.5 g to 5 g povidone, from about 0 to 1 g polyethylene glycol with an average molecular weight between 1000 to 6000, 0.2 g sodium benzoate, 0.2 g sucralose. 0.13 g saccharin sodium, 0.2 to about 0.4

6 g flavor, water to a volume of 100 mL, citric acid-sodium citrate
7 dihydrate to a pH of 4.5 to 5.5.

1 39. A liquid pharmaceutical composition comprising :

2 0.3 g diphenhydramine hydrochloride, 40 g 70% sorbitol solution, 30 g
3 glycerin, 2.5 g to 5 g povidone, 0 to 2.25 g polyethylene glycol with
4 an average molecular weight between 1000 to 8000, 0.2 g sodium
5 benzoate, 0.2 g sucralose. 0.13 g saccharin sodium, 0.2 to 0.4 g
6 flavor, water to a volume of 100 mL, citric acid-sodium citrate
7 dihydrate to a pH of 4.5 to 5.5.

1 40. A liquid pharmaceutical composition comprising :

2 0.08 g brompheniramine maleate, 40 g 70% sorbitol solution, 30 g glycerin,
3 2.5 g to 5 g povidone, 0 to 2.25 g polyethylene glycol with an
4 average molecular weight between 1000 to 8000, 0.2 g sodium
5 benzoate, 0.2 g sucralose. 0.13 g saccharin sodium, 0.2 to 0.4 g
6 flavor, water to a volume of 100 mL, citric acid-sodium citrate
7 dihydrate to a pH of 3 to 4.

1 41. A ready-to-use powder or granules for reconstitution wherein after reconstitution to
2 100 mL with water, the liquid pharmaceutical composition comprises:

3 3.25 to 13 g amoxicillin trihydrate, 45 g sucrose, 0.06 g sorbitan
4 monolaurate, 0.5 to 2.5 g povidone and/or copolyvidone, 0.1 to
5 about 0.5 g polyethylene glycol with an average molecular weight
6 between 1000 to 8000, 0.10 g methylparaben, 0.02 propylparaben, 0
7 to 0.004 g FD&C or D&C color, 0.20 to 1 g flavor, 1.2 g
8 precipitated silica, and sodium citrate to pH 4-6.

1 42. A ready-to-use powder or granules for reconstitution wherein after reconstitution to
2 100 mL with water, the liquid pharmaceutical composition comprises:

3 2 to 10 g cloxacillin sodium, 45 g sucrose, 0.06 g sorbitan monolaurate, 0.5
4 to 2.5 g povidone and/or copolyvidone, 0.1 to about 0.5 g

polyethylene glycol with an average molecular weight between 1000 to 8000, 0.10 g methylparaben, 0.02 propylparaben, 0 to 0.004 g FD&C or D&C color, 0.20 to 1 g flavor, 1.2 g precipitated silica, and sodium citrate to pH 4-6.

43. A method for preparing a taste-masked liquid pharmaceutical composition, comprising combining:

at least one unpleasant-tasting drug;

polyethylene glycol with a molecular weight of at least 900;

polyvinyl pyrrolidone and/or a copolyvidone; and

an aqueous liquid excipient base.

44. The method according to Claim 43, wherein said polyethylene glycol has an average molecular weight of from about 2000 to about 8000.

45. The method according to Claim 43, wherein said polyethylene glycol has an average molecular weight of from about 4000 to about 6000.

46. The method according to Claim 43, wherein said liquid pharmaceutical composition further comprises one or more additives selected from the group consisting of sweetening agents, flavors, colorants, antioxidants, chelating agents, viscosity-building agents, surfactants, pH modifiers, bulking agents, acidifiers, cosolvents, anticaking agents, and mixtures thereof.